

**IN THE DRAWINGS:**

The included replacement sheet of drawings includes changes to Fig. 2. This sheet, which includes Figs. 2, replaces the original sheet including Figs. 2. In Figure 2, a member number "214" has been added with a lead line to the "MEMORY" box. The original member number "214" with a lead line to the "STORAGE" box has been changed to "216". No new matter has been added by the amendments.

**Enclosed:            One Replacement Sheet for Fig. 2**

## REMARKS

This is intended as a full and complete response to the Office Action dated September 30, 2004, having a shortened statutory period for response set to expire on December 30, 2004. Please reconsider the claims pending in the application for reasons discussed below.

A paragraph of the specification has been amended to correct an informality. No new matter has been added by the amendments.

Fig. 2 has been amended to correct informalities. No new matter has been added by the amendments.

Claims 1-44 remain pending in the application after entry of this response. Claims 1, 15, 26, 29, 34, and 44 have been amended. No new matter has been added by the amendments. Claims 1-44 are rejected. Reconsideration of the rejected claims is requested for reasons presented below.

### ***Claim Rejections***

Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Bearden* (U.S. Pat. No. 6,167,965) in view of *Tubel* (U.S. Pat. No. 6,268,911). *Bearden* discloses controlling the flow rate of a submersible pump *only* by varying the speed of the pump's drive motor. For example, *Bearden* provides:

"Controller 411 may also control pump flow rates, as is depicted in flowchart form in FIG. 2B. The process begins at software block 229, and continues to software block 231, wherein controller 411 receives sensor data from flow meters which provide a continuous or intermittent measure of the amount of fluid flowing from the electrical submersible pump. In accordance with software block 233, controller 411 compares the actual flow rate with one or more desired flow rates. In software block 235, controller 411 determines whether the actual pump flow rate corresponds with the desired pump flow rates; if so, the process continues at software block 231 by continuing the monitoring operations; if not, the process continues at software block 237 wherein controller 411 is utilized to alter one or more operations conditions as per program instructions. *For example, controller 411 may direct commands to motor controller 412 which increase or decrease the operating speed of the electrical*

*submersible pump in order to match the actual pump flow rate with the desired pump flow rate.” (col. 13, lines 25-43, emphasis added.)*

Applicant has amended claims 1 and 15 to make clear that they do not encompass controlling the flow rate of a pump by varying the speed of an associated drive motor. This is a significant difference from *Bearden* because of the side effects of using variable speed motor control, discussed in the specification by Applicant, as follows:

“Despite their effectiveness, the viability of [Variable Speed Drives] VSDs is hampered by significant adverse effects that occur during their operation. One adverse effect is the introduction of harmonics. Harmonics are sinusoidal voltages or currents having frequencies that are whole multiples of the frequency at which the supply system is designed to operate (e.g., 50 Hz or 60 Hz). The harmonics are generated by switching the transistors that are part of the VSD. Harmonics are undesirable because they can cause damage to peripheral devices (e.g., household appliances such as televisions, microwaves, clocks and the like) that are serviced by the power company supplying power to the VSD. As a result, some power companies have placed restrictions on the use of VSDs.

In addition to the damage caused to peripheral devices, the pump motor and associated power cable may themselves be damaged. Specifically, the high peak-to-peak voltage spikes caused by switching the VSD transistors increases the motor temperature and can damage the motor power transmission cable (due to the large difference between the spike voltage and the insulation value of the cable). As a result, the chance for premature equipment failure is increased.” (pg. 3, line 19—pg.4, line 3).

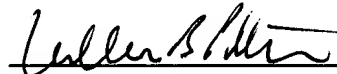
The Examiner cites two embodiments (Fig. 5 and Fig. 13) of *Tubel* to compensate for what is lacking in *Bearden*. Regarding the embodiment illustrated in Fig. 5, *Tubel* discloses a chemical injection system controlled by the surface control system 414 and/or the downhole control system 417,418. *Tubel* provides little detail of how these control systems function with the discussion of Fig. 5 and, as discussed in the Response to Office Action dated March 18, 2004, *Tubel* teaches, with reference to Figs. 8 and 11, a submersible pump controlled by varying the speed of its associated drive motor. Regarding the embodiment illustrated in Fig. 13, *Tubel* discloses a production system with a flow control device 904, however, *Tubel* does not disclose that a pump may be used with the production system.

Neither *Bearden* nor *Tubel* mention the problems associated with controlling a pump with a variable speed motor controller. Respectfully, the Examiner is trying to combine two separate embodiments of *Tubel* with *Bearden*. In doing so, the Examiner is impermissibly using hindsight, i.e. the above-cited shortcomings of variable speed control from the specification, as a motivation to combine *Bearden* with *Tubel*. Withdrawal of the rejection is respectfully requested.

Claims 26-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Bearden*. The arguments presented above for the rejection of claims 1-25 also apply to this rejection. Withdrawal of the rejection is respectfully requested.

Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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William B. Patterson  
Registration No. 34,102  
MOSER, PATTERSON & SHERIDAN, L.L.P.  
3040 Post Oak Blvd. Suite 1500  
Houston, TX 77056  
Telephone: (713) 623-4844  
Facsimile: (713) 623-4846  
Attorney for Applicant(s)